## Syllabus

### Course Description

<table>
<thead>
<tr>
<th>Course title</th>
<th>Introduction to Information Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course code</td>
<td>42125</td>
</tr>
<tr>
<td>Scientific sector</td>
<td>ING-INF/05</td>
</tr>
<tr>
<td>Degree</td>
<td>Bachelor in Industrial and Mechanical Engineering</td>
</tr>
<tr>
<td>Semester</td>
<td>I</td>
</tr>
<tr>
<td>Year</td>
<td>I</td>
</tr>
<tr>
<td>Academic year</td>
<td>2016-2017</td>
</tr>
<tr>
<td>Credits</td>
<td>6</td>
</tr>
<tr>
<td>Modular</td>
<td>No</td>
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</tbody>
</table>

| Total lecturing hours         | 36                                   |
| Total lab hours               | 24                                   |
| Total exercise hours          |                                       |

- **Attendance**: Attendance at assigned laboratory sections is required; lecture attendance is very strongly recommended.
- **Prerequisites**: Registration for the course of Bachelor in Industrial and Mechanical Engineering
- **Course page**: [http://www.unibz.it/en/sciencetechnology/progs/bachelor/industrial/courses/default.html](http://www.unibz.it/en/sciencetechnology/progs/bachelor/industrial/courses/default.html)

### Specific educational objectives

The course will provide an introduction to basic concepts in information and computer science (hardware and software), particularly those topics of fundamental importance to Industrial and Mechanical Engineering.

### Lecturer

- **Prof. Karl von Ellenrieder**
- **Facoltà di Scienze e Tecnologie**
- **Building K, Room 2.08**
- **Tel.: +39 0471 017172**
- **E-mail:** karl.vonellenrieder@unibz.it

### Scientific sector of the lecturers

ING-INF/04 - Automatica

### Teaching language

English

### Office hours

16:30-17:30 Wednesday and Thursday

### List of topics covered

- Basic programming syntax and structure in C
- Functions
- Conditional control structures
- Arithmetic, comparison and Boolean operators
- Pointers and addressing
- Data types
- Interrupts
- Simple electronic circuits

### Teaching format

Classroom lectures and laboratory exercises
### Learning outcomes

**Knowledge and understanding**

At the end of the course, students will understand:
- basic software design procedures
- how to develop simple microprocessor programs
- how to interface a microprocessor with simple sensors and actuators
- how to implement simple electro-mechanical systems

**Applying knowledge and understanding:** through hands-on laboratory exercises that complement the lectures.

**Making judgments:** on the choice of the right tools such as data types, programming approaches, or electrical components.

**Communication skills:** presenting and discussing solutions to selected laboratory problems.

**Learning skills:** basic foundations for more advanced courses in Industrial and Mechanical Engineering.

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Laboratory exercises (60%), written final exam (40%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment language</td>
<td>English</td>
</tr>
<tr>
<td>Evaluation criteria and criteria for awarding marks</td>
<td>Criteria for the evaluation of the written exam and laboratory exercises: completeness and correctness of answers. Students are required to receive an overall grade of higher than 60/100 points in order to pass the course.</td>
</tr>
</tbody>
</table>

### Required readings


Hardcopies available in library reserves, or can be downloaded here – http://www.introtoarduino.com/downloads/IntroArduinoBook.pdf

### Supplementary readings